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EXAMINER	
DEVI, SARVAMANGALA J N	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,458	ANDERSON ET AL.	
	Examiner	Art Unit	
	S. Devi, Ph.D.	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 33-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9 and 33-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07/13/09* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

RESPONSE TO APPLICANTS' AMENDMENT

Applicants' Amendments

1) Acknowledgment is made of Applicants' amendment filed 07/13/09 and 03/13/09 in response to the non-final Office Action mailed 12/15/08.

Status of Claims

2) Claims 1, 3-8 and 33-46 have been amended via the amendment filed 07/13/09.

Claims 2, 10, 17, 18, 20, 21, 24, 25, 27 and 29 have been canceled via the amendment filed 03/13/09.

Claims 47-54 have been added via the amendment filed 03/13/09.

Claims 1, 3-9 and 33-54 are pending and are under examination.

Prior Citation of Title 35 Sections

3) The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office Action.

Prior Citation of References

4) The references cited or used as prior art in support of one or more rejections in the instant Office Action and not included on an attached form PTO-892 or form PTO-1449 have been previously cited and made of record.

Objection(s) Withdrawn

5) The objection to the specification made in paragraph 7(a) of the Office Action mailed 12/15/08 is withdrawn in light of Applicants' amendment to the specification.

6) The objection to the specification made in paragraph 7(b) of the Office Action mailed 12/15/08 is withdrawn in light of Applicants' amendment to the specification.

7) The objection to claim 37 made in paragraph 16 of the Office Action mailed 12/15/08 is withdrawn in light of Applicants' amendment to the claim.

Rejection(s) Moot

8) The rejection of claim 2 made in paragraph 10 of the Office Action mailed 12/15/08 under 35 U.S.C § 101 as being directed to a non-statutory subject matter, is moot in light of Applicants' cancellation of the claim.

9) The rejection of claim 2 made in paragraphs 12(b), 12(c) and 12(j) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is moot in light of Applicants' cancellation of the claim.

10) The rejection of claim 2 made in paragraph 14 of the Office Action mailed 12/15/08 under 35 U.S.C. § 103(a) as being unpatentable over Foster *et al.* (US 6,841,154) ('154) in view of Christensen *et al.* (US 7,456,276), is moot in light of Applicants' cancellation of the claim.

Rejection(s) Withdrawn

11) The rejection of claims 1, 7 and claims 3-6 and 33-36 made in paragraph 10 of the Office Action mailed 12/15/08 under 35 U.S.C § 101 as being directed to a non-statutory subject matter, is withdrawn in light of Applicants' amendment to the base claim.

12) The rejection of claim 1 made in paragraph 12(a) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

13) The rejection of claims 3-6 made in paragraph 12(b) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claims.

14) The rejection of claim 3 made in paragraph 12(c) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn. A new rejection is set forth below to address the claim as amended.

15) The rejection of claim 7 made in paragraphs 12(d), 12(e) and 12(h) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

16) The rejection of claim 7 made in paragraph 12(f) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn.

17) The rejection of claim 1 made in paragraph 12(g) of the Office Action mailed 12/15/08

under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

18) The rejection of claims 8, 37, 39, 43 and 45 made in paragraph 12(i) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claims.

19) The rejection of claims 3-6, 8, 9 and 33-46 made in paragraph 12(j) of the Office Action mailed 12/15/08 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the base claim.

20) The rejection of claims 1, 3-8, 33-35 and 37-44 made in paragraph 14 of the Office Action mailed 12/15/08 under 35 U.S.C. § 103(a) as being unpatentable over Foster *et al.* (US 6,841,154) ('154) in view of Christensen *et al.* (US 7,456,276), is withdrawn in light of Applicants' amendment to the claims.

21) The rejection of claim 9 made in paragraph 15 of the Office Action mailed 12/15/08 under 35 U.S.C. § 103(a) as being unpatentable over Foster *et al.* (US 6,841,154) ('154) as modified by Christensen *et al.* (US 7,456,276) as applied to claims 1 and 8 above, is withdrawn in light of Applicants' amendment to the base claim.

New Rejection(s) Necessitated by Applicants' Amendment

Rejection(s) under 35 U.S.C. § 112, First Paragraph (Written Description)

22) The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

23) Claims 1, 3, 4, 7-9, 33-35, 37-44, 47, 49-51 and 53 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The purified polypeptide immunogen of the independent claim 1 consists of a fragment of an amino acid sequence at least 90% identical to SEQ ID NO: 3, where said fragment comprises

an amino acid sequence at least 90% identical to SEQ ID NO: 1 (i.e., polypeptide immunogen fragment variant), wherein said polypeptide immunogen provides protective immunity against *S. aureus*. The polypeptide immunogen present in the composition claimed in the independent claim 8 is purified and consists of a fragment of an amino acid sequence at least 90% identical to SEQ ID NO: 3, where said fragment comprises an amino acid sequence at least 90% identical to SEQ ID NO: 1 (i.e., polypeptide immunogen fragment variant), wherein said polypeptide immunogen provides protective immunity against *S. aureus*. Note that *S. aureus* encompasses homologous or heterologous strains of *S. aureus*, coagulase-positive and coagulase-negative *S. aureus*; multiple drug-resistant and methicillin-resistant strains of *S. aureus* (MRSA), various phage types of *S. aureus*, enterotoxigenic and non-enterotoxigenic *S. aureus,* and various other serotypes including non-typeable *S. aureus*. For instance, von Eiff *et al.* (*Diagn. Microbiol. Infect. Dis*. 58: 297-302, 2007) teach the prevalence of clinical isolates of *S. aureus* as various *spa* serotypes and capsular serotypes. See abstract of von Eiff *et al.* The polypeptide immunogen of claim 7 is not required to be isolated or purified. The polypeptide immunogen of claim 7 is not required to be isolated or purified and consists of an amino acid sequence at least 90% identical to SEQ ID NO: 1 and one or more additional regions or moieties covalently joined to said sequence at the carboxyl or the amino terminus, wherein each of the regions or the moieties is independently selected from a region or moiety having at least one of the following properties: enhancement of immune response, facilitation of purification, or facilitation of polypeptide stability. The one or more additional regions or moieties as recited in claim 7 do not exclude the additional region or moiety sequences from an ORF0657n related polypeptide of any microbial source, but encompass such sequences. While the polypeptide immunogen fragment claimed in the dependent claim 3 consists of a fragment of an amino acid sequence at least 94% identical to SEQ ID NO: 3, wherein said fragment comprises an amino acid sequence at least 94% identical to SEQ ID NO: 1 (i.e., polypeptide immunogen fragment variant), the polypeptide immunogen fragment claimed in the dependent claim 4 or the polypeptide immunogen claimed in the dependent claim 37 consists of an amino acid sequence at least 94% identical to SEQ ID NO: 1 (i.e., polypeptide immunogen fragment variant). Each of these polypeptide immunogen fragment variants is required to provide protective immunity against homologous or heterologous *S. aureus* in a human or non-human host. The polypeptide immunogen claimed in the dependent claims 33-35, 37-44, 47 and 49-51

encompass further variants that differ from SEQ ID NO: 1 by up to 5-25 amino acid alterations. Note that the limitation 'amino acid alterations' encompass amino acid deletions, substitutions, insertions and modifications. While these further variants claimed in claims 33-35 and 39-44 and carrying the recited additional amino acid alterations are required to provide protective immunity against any strain of *S. aureus,* the further variants claimed in claims 49-51 are required to remain immunogenic. The term 'immunogen' however is defined at line 25 of page 2 of the specification as one having the ability to provide protective immunity. The limitation 'patient' in claim 8 and the limitation 'human' in claims 38, 40, 42 and 44 encompasses immunosufficient, immunodeficient and immunocompromised human patients.

The claims thus encompass a vast genus of polypeptide immunogen variants or immunogen variants of SEQ ID NO: 3 and SEQ ID NO: 1, each having the ability to provide protective immunity against *S. aureus*, or the ability to serve as an immunogen. The term 'immunogen' is defined at line 25 of page 2 of the specification as one having the ability to provide protective immunity. The specification intends prophylactic applications for the claimed variants. Any amino acids may be substituted or deleted along the length of SEQ ID NO: 1 as long as the polypeptide fragment retains the percent identity as recited, with or without the further up to 25 amino acid alterations. The specification intends prophylactic applications for the claimed immunogen variants.

The *Written Description Guidelines* state:

> There is an inverse correlation between the level of predictability in the art and the amount of disclosure necessary to satisfy the written description requirement. For example, if there is a well-established correlation between the structure and function in the art, one skilled in the art will be able to reasonably predict the complete structure of the claimed invention from its function.

In *Enzo Biochem. Inc. v. Gen-Probe Inc.*, 323 F3.d 956, 964, 63 USPQ2d 1609, 1613 (Fed. Cir. 2002), the Federal Circuit adopted a portion of the Guidelines proffered by the United States Patent and Trademark Office (USPTO). The court stated that:

> The written description requirement can be met by "show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics ... e.g., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics."

Enzo Biochem, 323 F.3d at p64, 63 USPQ2d at 1613 (citing Guidelines for Examination of Patent Applications under the 35 U.S.C § 112, first paragraph Written Description Requirement,

66 Fed. Requirement 1099, 1106 (January 5, 2001)). Sufficient description to show possession of a genus may be achieved by means of recitation of a representative number of polypeptides, defined by amino acid sequences falling within the scope of the genus, or recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus. *Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406. Possession may *not* be shown by merely describing how to obtain possession of members of the claimed genus or how to identify their common structural features. See *University of Rochester*, 358 F.3d at 927, 69 USPQ2d at 1895.

In the instant application, Applicants have shown possession of a purified polypeptide immunogen consisting of SEQ ID NO: 1, which is a truncated full length ORF0657n polypeptide (SEQ ID NO. 2) of *S. aureus* COL. See pages 5 and 8. SEQ ID NO: 1 appears to consist of amino acids 42-486 of SEQ ID NO: 3. Figure 1A is said to depict polypeptides that were tested and found to be protective (shown by filled rectangles) and polypeptides tested and found not to be protective (shown by open rectangles). Of these, ORF0657nI species (SEQ ID NO: 1) falling within the scope of the instant claims is said to be protective, although the strain of *S. aureus* used and the precise test used for protection is not disclosed. However, this single species is not representative of the huge genus of the claimed polypeptide immunogen variants, each having an amino acid sequence that is up to 10% non-identical with SEQ ID NO: 1. This is critically important because the polypeptide depicted as fragment 2 in Figure 1A via one of the open rectangles consists of amino acids 82-486 of SEQ ID NO: 1 and therefore serves as a polypeptide consisting of an amino acid sequence that is 90.58% identical to SEQ ID NO: 1. This polypeptide variant was tested for protection and was found **not** to be protective. See first full paragraph on page 5 of the instant specification. This is indicative of unpredictability in obtaining a polypeptide species that is about 10% non-identical in structure to SEQ ID NO: 1 which concurrently remains protective against *S. aureus* infection. Furthermore, the instant specification at third full paragraph of page 8 states that a fragment of SEQ ID NO: 2 consisting of amino acids 82-486 or 42-196 was **not** protective. Since the amino acid residues 42-486 of SEQ ID NO: 2 constitute SEQ ID NO 1, a fragment consisting of the amino acids 82-486 of SEQ ID NO: 2 becomes a fragment of SEQ ID NO: 3 with 91% sequence identity to SEQ ID NO: 1. Such a polypeptide fragment falling within the scope of the instant claims is expressly disclosed as being not protective at third full paragraph of page 8. This admitted non-protection by the

fragments of SEQ ID NO: 2 or 1 consisting of amino acids 82-486 or 42-196 appears to indicate the absence of one or more protective epitopes in these regions. Thus, the unmodified SEQ ID NO: 1 when merely split into a fragment of amino acids 82-486, or amino acids 42-196, looses its protective capacity. This is indicative of the criticality of retaining all the amino acid residues of SEQ ID NO: 1 intact within the claimed fragment in order to retain the requisite function of providing protective immunity against *S. aureus*. Thus, not only is there a lack of structure-function correlation for a representative number of claimed polypeptide immunogen variant species within the instant specification, there is also a lack of predictability as to whether polypeptide variants having up to 10% non-identity to SEQ ID NO: 1 anywhere along SEQ ID NO: 1 would remain immunospecific to *S. aureus* and provide protective immunity against *S. aureus* in a human or a non-human host. Other than the purified polypeptide immunogen fragment species consisting of SEQ ID NO: 1 of *S. aureus* COL and having the capacity to provide protective immunity against a strain of *S. aureus,* no other polypeptide fragment immunogen species, purified or not, falling within the claimed broad genus and having the recited requisite function were in Applicants' possession at the time of the invention. Figures 4A-4H pertain to SEQ ID NO: 28, which sequence is acknowledged by Applicants as corresponding to the full length SEQ ID NO: 2 with a His-Tag. SEQ ID NO: 28. SEQ ID NO: 28 and the full length proteins depicted in Figures 2A-2E do not fall within the scope of the huge genus of variants currently claimed. Without a convincing correlation between structure and function, the claims do little more than define the claimed invention by function. That is not sufficient to satisfy the written description requirement. *Ex parte Kubin*, 83 USPQ2d 1410 (Bd. Pat. Appl. & Int. 2007) citing *Eli Lilly*, 119 F.3d at 1568, 43 USPQ at 1406 ('definition by function ….. does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is').

The description of a single protective polypeptide immunogen species within the recited genus may not be sufficient to support the patentability of the genus under 35 U.S.C § 112, first paragraph. See *University of California v. Eli Lilly & Co.*, 119 F.3d 15559, 1567, 43 USPQ2d 1398, 1405 (Fed. Cir. 1997). The specification does not disclose the precise structure of a representative number of polypeptide immunogen variants in which an amino acid sequence consisting of SEQ ID NO: 1 is varied to contain up to 25 amino acid alterations, or that are at

least 90% or 94% identical to said SEQ ID NO: 1, wherein the polypeptide variants have the recited requisite protection function against *S. aureus*. The instant specification does not disclose which 1-25 amino acid residues within SEQ ID NO: 1, or which up to 10% of amino acid residues within SEQ ID NO: 1, should be altered such that one can maintain the required biological function, i.e., the capacity to provide the requisite protective immunity against *S. aureus*. No other amino acid sequences of purified, isolated or non-isolated polypeptide immunogen variants having 1-25 amino acid residues within a polypeptide consisting of SEQ ID NO: 1 altered, or up to 10% of amino acid residues within SEQ ID NO: 1 varied, are described, wherein the resultant polypeptide variant is capable of *providing protective immunity* against homologous or heterologous strain, serotype, phage type, *Spa* type, or capsular type of *S. aureus*. There is lack of adequate description of the structure of a representative number of isolated or non-isolated, purified or non-purified, polypeptide immunogen variants in which an amino acid sequence consisting of SEQ ID NO: 1 is varied to contain up to 25 amino acid alterations, or is at least 10% non-identical to said SEQ ID NO: 1, wherein the polypeptide has the requisite function, i.e., *the capacity to provide protective immunity* against homologous or heterologous strain, serotype, *Spa* type, phage type, or capsular type of *S. aureus*. It should be noted that written description requires more than a mere statement that something is a part of the invention. Applicants have not described what domains, contiguous or discontiguous antigenic determinants, or conformational or non-conformational epitopes of the recited polypeptide immunogen fragment variant are correlated with the required capacity to provide protective immunity against homologous or heterologous *S. aureus*.

With respect to the written description requirement, while 'examples explicitly covering the full scope of the claim language' typically will not be required, a sufficient number of representative species must be included 'to demonstrate that the patentee possesses the full scope of the [claimed] invention'. *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345, 76 USPQ2d 1724, 1732 (Fed. Cir. 2005). In the instant case, Applicants' specification does not contain a written description sufficient to show they had possession of the full scope of their claimed invention at the time the application was filed. The instant specification mentions of 'a polypeptide consisting of an amino acid sequence at least 90% identical to SEQ ID NO: 3 or a fragment thereof comprising an amino acid sequence structurally related to SEQ ID NO: 1'.

However, the specification does not disclose a correlation between the function (i.e., capacity to provide protective immunity against homologous or heterologous strain, serotype, phage type, *Spa* type, or capsular type of *S. aureus*) and the precise structure, or conformational or non-conformational epitope(s) responsible for providing such protective immunity such that a skilled artisan would have known what alterations including deletions, substitutions, additions, or other variations could be made of the large number of alterations currently encompassed within the scope of the instant claims without losing the protective function. The specification does not adequately describe or identify the *S. aureus*-specific, or *S. aureus* serotype-specific, non-serotype-specific or *S. aureus* strain-specific linear or conformational protective epitopes within a polypeptide consisting of SEQ ID NO: 1 or within said amino acid sequence with up to 20 amino acid alterations therein, or within an amino acid sequence at least 90% identical to SEQ ID NO: 1. This description is important because for a polypeptide to be protective against *S. aureus*, it has to minimally bind immunospecifically with the corresponding native *S. aureus* polypeptide-specific antibody. A change of even a single amino acid residue is known to alter the folding of a polypeptide such that the antibody-binding region no longer recognizes the polypeptide. See right column on page 33 of Colman PM. *Research Immunol.* 145: 33-36, 1994. The instant specification at second full paragraph of page 12 describes that substituting amino acids have similar properties such as amino acid size, charge, polarity, and hydrophobicity. However, it is recognized in the art that even a very conservative substitution may abolish binding. See first full paragraph on page 35 of Colman. Colman further taught that binding interactions could be considered less tolerant because the changes involved occur in what might be called the active site. See third full paragraph on page 35 of Colman. Although a microbial polypeptide having up to 20 amino acid alterations, or at least 10% non-identity with the native polypeptide is expected in the art to generally induce some antibodies, the capacity of such antibodies to provide specific protective immunity against homologous or heterologous strain, serotype, phage type or capsular type of *S. aureus* is not predictable. The art reflects unpredictability as to which amino acids in a specific protein can be varied, i.e., replaced or added, without adversely affecting the functional properties of that specific protein. In other words, the retention of the immunospecificity following one or more amino acid substitutions, including conservative amino acid substitutions within a bacterial polypeptide is not predictable. For instance, McGuinnes *et al.* (*Mol. Microbiol.*

7: 505-514, Feb 1993) taught that "[a] single amino acid change within an epitope, or an amino acid deletion outside an epitope, were both associated with loss of subtype specificity resulting from a change in the predicted conformation at the apex of the loop structure" in case of a meningococcal polypeptide. See abstract. Similarly, McGuinnes *et al.* (*Lancet* 337: 514-517, March 1991) taught that a point mutation generating a single amino acid change in a P1.16-specific epitope in the VR2 region of the *porA* gene of a strain of *Neisseria meningitidis* of subtype P1.7,16 resulted in "striking changes in the structural and immunological properties of the class 1 protein" of this isolate. See abstract and page 514 of McGuinnes *et al.* Thus, the state of the art at the time of the invention documents the unpredictability in obtaining a functional variant of a microbial polypeptide that retains its specific immunological binding function(s). In the instant case, the purified polypeptide consisting of SEQ ID NO: 1 appears to be a novel polypeptide of *S. aureus*, the only species falling within the scope of the instant claims that is said to have been tested and found to be protective against an undisclosed strain of *S. aureus*. See Figure 1A. Clearly, Applicants did not describe the invention of the instant claims sufficiently to show that they had possession of the recited genus of polypeptide immunogen or immunogen variants claimed. See e.g., *Noelle v. Lederman*, 355 F.3d 1343, 1348, 69 USPQ2d 1508, 1513 (Fed. Cir. 2004) ('invention is, for purposes of the written description inquiry, *whatever is now claimed*'). Applicants should note that written description requires more than a mere statement that something is a part of the invention and a reference to a potential method for isolating it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. The instant claims are viewed as not meeting the written description provision of 35 U.S.C. § 112, first paragraph.

Rejection(s) under 35 U.S.C. § 112, Second Paragraph

24) The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his/her invention.

25) Claims 1, 3-9 and 33-54 are rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

(a) Claim 5, as amended, is indefinite because it has improper antecedent basis in the limitation 'the additional 20 amino acids'. See line 3. The previous limitation in line 3 of the claim is of 'up to 20 additional amino acids', not of 20 additional amino acids.

(b) Analogous rejection and criticism apply to new claim 53.

(c) Claim 1, as amended, is vague and inconsistent in the use of limitations 'where said' (see line 3) and 'wherein said' (see line 4). To be consistent, it is suggested that Applicants replace the limitation 'where' in line 3 of the claim with the limitation --wherein--.

(d) In line 4 of claim 5 and line 3 of new claims 47 and 53, for the purpose of distinctly claiming the invention, it is suggested that Applicants replace the limitation 'amino terminus' with the limitation --the amino terminus--.

(e) Claims 5, 47 and 53 are further vague and indefinite in the limitation 'the carboxyl or amino terminus' (see last line), because it is unclear the carboxyl or amino terminus of what element Applicants are referring to. Is this the carboxyl or the amino terminus of a specific peptide within SEQ ID NO: 1, or the carboxyl or the amino terminus of the amino acid sequence of SEQ ID NO: 1?

(f) Claim 8 is vague and indefinite in the broadening limitation: 'provides protective immunity against *S. aureus*' in line 3. The earlier part of the claim includes a narrower limitation that the composition is to induce a protective immune response against *S. aureus* 'in a patient'. Is the protective immunity against *S. aureus* that is recited in line 3 of the claim provided to a subject other than 'a patient' recited in line 2, or to the same patient recited in line 2 of the claim?

(g) Claim 7, as amended, is vague and indefinite in the limitation: 'facilitates polypeptide stability', because it is unclear the stability of which polypeptide is being facilitated by the one or more additional regions or moieties. Does it mean that the claimed immunogen is unpurified and exists in association with a polypeptide, the stability of which polypeptide is facilitated?

(h) In the last two lines of claim 7, for the purpose of distinctly claiming the subject matter, it is suggested that Applicants replace the limitation 'enhances the immune response, facilitates purification, or facilitates polypeptide stability' with the limitation --enhancement of immune response, facilitation of purification, or facilitation of .... stability--.

(i) Claims 3, 4, 6, 9 and 33-54, which depend directly or indirectly from claim 5, 7 or 8, are also rejected as being indefinite, because of the indefiniteness identified above in the base claim.

Claim(s) Objection(s)

26) Claims 5, 6, 47, 48, 53 and 54 are objected to for the following reason:

Because of the use of the alternative 'or' limitation, the use of the pleural limitation 'NOs' is incorrect in claims 5, 6, 47, 48, 53 and 54. It is suggested that Applicants replace the above-identified limitation with the limitation --NO.--.

Remarks

27) Claims 1, 3-9 and 33-54 stand rejected.

28) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 C.F.R 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

29) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. The Fax number for submission of amendments, responses and/or papers is (571) 273-8300, which receives transmissions 24 hours a day and 7 days a week.

30) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAG or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.Mov. Should you have questions on access to the Private PAA

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or CANADA) or 571-272-1000.

31) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 7.15 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Robert Mondesi, can be reached on (571) 272-0956.

/S. Devi/
Primary Examiner
AU 1645

November, 2009